

The True Mother of Invention

February 21st 2013

Value-adding Integration - Concept and methods for
successful low cost, fast improvement and innovation;
and better collaboration

The True Mother of Invention

Successful invention, innovation and improvement need more than just an imperative, or some initial effort. 'Mother' must do much more!

(William Horman, the headmaster of Winchester and Eton schools in England, is an early written source, 1519, of the saying linking Necessity and Invention, *Mater artium necessitas*, although his meaning is different. There can be no certainty about an earlier verbal source, but he grew up and worked in turbulent times near a noticeable medieval building site and work of art – Winchester Cathedral.)

Good Morning, Good Afternoon and Welcome – I'm Nigel Moore. I'm honored and excited to be here today and thank you for joining me. Excited, because NASA is a truly great organization and has been an inspiration to me since Project Mercury, Telstar and the X-15. Great organizations are built by people working together to add value; and sometimes, they achieve extraordinary things as NASA continues to do.

Value-adding Integration is a way of seeing situations, analyzing them and helping to produce improvements and innovations. In this presentation you will hear about the Value-adding Integration Methodology (comprising concept and methods) and how to use it; also some advantages and detail; and some theory. But time is too short to cover everything; you can download further information.

**“Providing more opportunities
for collaboration is **key** to achieving
Space Life Sciences goals”**

**Dr Jeffrey R. Davis, MD,
Director, Space Life Sciences, NASA
Johnson Space Center**

Providing more opportunities for collaboration is key to achieving Space Life Sciences goals. Please can I ask you to keep this quote by Dr Davis in mind.

Key to Dr Davis’s **key** (or key squared) is the Value-adding Interface; **creating it, understanding it and making it work better**. And then repeating. That’s **the crux** of Value-adding Integration and this presentation is mainly about showing you how to do it.

Apologies if I go too fast or slow. As a consulting engineer I much prefer listening to Clients’ problems and fixing them than talking.

(In the presentation words are used in ways intended to open up creativity, not limit it. For example, mention ‘housing’, a place to live, and we tend to then think of houses whereas ‘home’ or ‘accommodation’ opens more possibilities. Also, words used for collaboration do not seem to capture the essence of the collaborative effort, what you are trying to achieve, or support the effort except the words Value-adding Integration.)

(In the text ‘end-user’ is generic for end-user, customer, client, astronaut, pilot, passenger, patient, operator etc. as appropriate to the situation being studied)

(To start using the methodology see the Overview and Quick Start Guide)

About us (and me)

- Green Leader Limited
Rail electrification consulting engineers
 - 14 years of virtual operations
 - Value-adding Integration approach to business
- CEO and founder (poor hearing)
 - Engineer (electrical/electrification)
 - Voluntary work in rare diseases
 - Barth Syndrome Foundation Inc. (virtual working)



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We'll get through the Introduction as quickly as possible.

1 Much of our work is high level review and analysis.

1.1 We don't have a central office, just a core of people and network of associates;

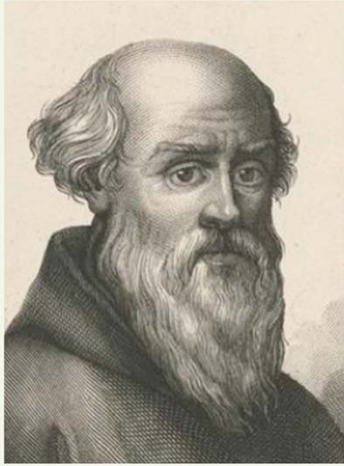
1.2 The first words on our website relate to our *Value-adding Integration approach to business. We will work closely with you to achieve your objectives.* It works for us in many ways; getting work, working with Clients, each other and saving costs. Our basic questions are, can we work together to add value? And how do we deliver value?

2.2 My voluntary work has influenced some of the Value-adding Integration Methodology.

(Hopefully much of the explanation of Value-adding Integration will sound familiar, if a bit different, logical and supported by your experience. There are many successful examples around, but of course nobody describes them in terms of Value-adding Integration and the systematic analysis or a common methodology tend to be absent. In any case, sometimes there are other ways of seeing these as improvements or innovations and getting to the same result.

However, when looking for an improvement it can be difficult to spot what with hindsight seems obvious. Value-adding Integration can help and, it appears straightforward to use once VA interfaces and VAI are understood. Also, we can translate lessons from existing success stories into very different situations.)

Music to your ears



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Before starting I would like to share this short example with you.

Imagine a world without written music. It existed up to the Middle Ages, about 1000 years ago. Singers and musicians needed good memories; sometimes very good ones to remember up to 800 Gregorian Chants. It could take years.

Clearly singers add value, they can sing; a tune or some form to music adds value, or you are listening to noise. What was needed was some way to add more value between singer and song, or chorister and chord or monk and music – in a word at the Value-adding Interface. Lets make some space here: Integration Space.

Enter another thing into our space that adds value, pen and parchment and a monk, Guido of Arezzo, 1 who figured out a way of writing down music quite well, musical notation 2 (although this example is modern). The rest is history, all the rich variety of music we enjoy today would not have been possible without Guido.

But why did it take so long? Stone and stylus, had been around for a couple of thousand years before, but attempts to help singers, sing, were primitive. They knew about recording words, but not much effort went into recording music, just in recruiting monks with memories, who could also chant.

To invent, innovate, or improve you need something working behind the scenes helping you to: Look in the right places; Ask the right questions; Work together effectively. This music problem gets to the heart of Value-adding Integration.

Aims of Presentation

- Make Value-adding Integration Methodology accessible and value-adding to NHHPC members*
- Start discussion and sharing of innovation methodologies*
- Encourage new/better methodologies*

*These are all Value-adding Integration (VAI) type activities



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(Number: bullet point position and follows topic/point being made unless shown *)

The aims of this presentation are to:

1 Make the Value-adding Integration Methodology accessible and, hopefully, value-adding to NHHPC members

2 Start a discussion and sharing of innovation methodologies amongst NHHPC members. It is difficult to work on something that isn't actually there. The Value-adding Integration Methodology provides something tangible for you to comment and improve on.

3 Encourage new and better methodologies to support innovation and improvement arising from your experience and 'in the light of current knowledge and invention'.

I do hope that you will want to develop better methodologies to support invention, innovation and improvement perhaps focusing on usability and effectiveness.

Methodologies are excellent ways of sharing best practice gained from experience for the benefit of all.

Why Use a Methodology?

To make innovation and improvement

- Easier
- More productive
 - Better outcomes
 - Faster
 - Lower risk
 - Lower process cost
- More fun (for everyone involved)



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Why use a methodology to support the whole process of innovation and improvement? (Recent example: unhelpful Innovation Center) Why not just get everyone in a room with a flip chart and whiteboard or lie on the beach gazing at the blue sky until inspired?

1 *To make innovation and improvement easier* for everyone involved

2 To make the efforts involved *more productive* including:

Delivering *better outcomes* in, for example, functionality, performance, end-user satisfaction or patient healthcare

Reducing time before meaningful or useful results appear

Reducing risks to a successful outcome (whatever your definition of 'success')

Incurring *lower process costs* for carrying out innovation or improvement

3 Making it *more fun for everyone involved*. Work should get less stressful, wherever possible. Also the best ideas come from people who love their work.

(A methodology will also tend to make the innovation and improvement process more structured and better organized.)

One (obvious) caveat – no methodology can work by itself; it is part of (or an aid to) using brainpower, not a substitute for effort.

Value-adding Integration is bringing closer together in ways that add further value

- Thru' Integration of value/value-adding part(s)
 - Better end result is obtained
 - Waste/cost and workloads reduced
- Opportunities for further enhancements arise
 - Integration adds value in its own right
 - Creates new situation for further improvement
- Problems at interfaces are reduced or eliminated



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Value-adding Integration is bringing (value-adding elements) closer together in a way that adds further value. To do this we focus on Value-adding Interfaces; creating them, understanding them and making them work better.

1 Through integration of elements which already have value to the end-user: A better end result (of value-added in utility, functionality, product, service etc.) is obtained.

Also waste or cost, and workloads are reduced or even a non-value-adding activity turned into one that adds value, and;

2 Opportunities for further enhancements or added value also arise. In effect, the *integration adds value in its own right, creates a new situation* and encourages *further improvement or innovation, and;*

3 Problems at interfaces are reduced or better still, eliminated.

We will look at the theory of Value-adding Integration, then the process to follow and then look briefly at some examples.

Definitions

- Value: end-user defined value/worth
 - Recognized as need, want, perception, utility, functionality etc.
- Value-adding: creates or enhances value
 - Provided by utility, functionality, feature, performance etc. (existing in value-adding elements. e.g. in products or services)
- Value-adding activity/process: needed to provide value
- Non-VA activity/feature: no value to end-user
- Integration: better value-adding 'fit' or co-ordination
 - With end-user values, perceptions, needs etc.
 - Other VA activities (in a process)



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1 The concepts of value and value-adding have been around for years. *Value is end-user defined value or worth and recognized as need, want, perception, utility, functionality.*

2 *Value-adding creates or enhances value and is provided by utility, functionality, feature, performance etc. These exist in value-adding elements e.g. in products or services.*

3 *A value-adding activity or process is needed to provide end-user value.* Typically, Value-adding activities are design, manufacture, providing a service.

4 *Non-value-adding activity has no real or perceived value to the end-user.* There is no loss to the end-user if it is eliminated.

5 *Integration* is bringing value-adding elements closer together:

(a) in a *better value-adding 'fit'*, (fit, form or function), or

(b) *meeting/co-ordination with:*

(1) *end-user values, perceptions, needs, wants or aspirations, or;*

(2) *with other value-adding activities.*

For example, the fit of the customer with value-adding elements of a product; fit of sequential value-adding activities in a process; merging of independently delivered services; bringing a patient closer to a 'normal' life. Integration implies the existence of an interface – the Value-adding Interface, the subject of the next slide.

Value-adding Interfaces

- Value occurs at interface - VA elements meet here
 - Between: product (or activities)/end-user; process stages or activities; parts; patients/their world etc.
 - Value can be created or lost here
 - Interfaces are often overlooked area, problems occur
- Integration changes interface or creates new interface with potential for adding more value
- Interfaces exist within end-user's 'Big Picture'



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Value-adding Interfaces are 'places' where interactions occur which impact on value to the end-user. 1 They are where *value-adding elements meet*.

1.1 Typically they can exist between (1) the end-user, and his or her 'world', or (2) the end-user and product or service, or (3) end-user's 'world' and product or service.

They can be conceptual, physical, environmental, aspirational/life style and/or perhaps a combination.

1.2 *Value can be added or lost here.*

1.3 Interfaces are *often overlooked* and are often *areas* where *problems occur*. Focus on better integration tends to reduce interface problems and non-value-adding activity (or time); ideally there is complete, seamless integration where these cannot exist.

Value, to end-users, tends to occur at the interface, in the interaction(s), utility, functionality or performance present. The remainder of the activity, or product, or other (value-neutral) interfaces may be necessary, but do not necessarily add value; the test is, 'Would there be any loss of value if it were removed?'

2 *Integration changes the Value-adding Interface or creates a new interface with potential for adding more value.* Bread has value, so has butter – candidates for integration by bringing physically together. The new Value-adding Interface created can be further worked on.

3 *Interfaces exist within a 'Bigger Picture'* set by the end-user in wants, needs or what they are trying to achieve. For example, engineering has commercial and operational implications; it fits within a 'Big Picture' and is not an end in itself.

Summary – Main Principles

- Value is only added at the Value-adding Interface
 - Better integration reduces costs/wastage, enhances end-user value
- The end-user's 'world' (or Big Picture) defines 'value'
 - VAI can help in understanding end-user's 'world' and identify value
- Successful innovation/improvement arises from better Value-adding Integration with end-user's world
 - Risks from innovation are substantially reduced
- Innovative integration leads to further opportunities for adding value
 - New situation created at substantially reduced cost and risk



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Summary of Main Principles This is the theory in a nutshell.

1 Value is only added at the Value-adding Interface

2 The end-user's 'world' or Big Picture defines 'value'

3 Successful innovation or improvement arises from better Value-adding Integration with the end-user's 'world' or Big Picture which includes the end-user

4 Innovative, or perhaps less obvious, integration leads to further opportunities for adding value

(There are four obvious situations where you may wish to carry out Value-adding Integration. More information on these is in the Introduction to Value-adding Integration document. The four situations are Integration of Similarity, Integration of Diversity, Sequential Integration and Lateral Integration. Sequential Integration is particularly relevant to speeding up research.)

The other nutshell you need is an effective process to follow to make it work, which is the subject of the following slides.

Carrying out Value-adding Integration

- Step 1 Develop Value-adding Integration proposals*
(Work around value-adding interfaces: create, understand and make them work better)
- Step 2 Check proposals for technical/commercial compliance/expectations*
- Step 3 Check successful fulfilment assurance*

**Overall you are trying to :*

Identify (e.g. the problem, or opportunity)

Analyse (e.g. the problem, or opportunity)

Innovate or improve, devise a solution with added-value

Make it work, in accordance with your definition of success



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Carrying out Value-adding Integration This is an overview of the main stages:

1 *Step 1 Develop Value-adding Integration proposals* Our work activity is focusing on *working around the Value-adding Interfaces; creating, understanding and making them work better.*

2 *Step 2 Check proposals for technical/commercial compliance/expectations*

3 *Step 3 Check successful fulfilment assurance*

These steps are at the top level of an expandable hierarchy of activities – you expand and drill down to suit your particular situation.

4 **Overall you are trying to:*

Identify (e.g. the problem, or opportunity)

Analyse (e.g. the problem, or opportunity)

Innovate or improve, devise a solution with added-value

Make it work, in accordance with your definition of success

(Note: Value-adding Integration provides a common language (for communicating ideas), methodology (for systematic analysis), focus (for management deployment). When you develop an improved innovation methodology these are some of the features you will need to include.)

STEP 1 Develop VAI Proposals

- Place within 'Big picture'
 - Examine end-user (or next user) needs, wants etc.
 - Examine next activities (in process)
 - Characterize (key) interfaces (create/add V, problems)
- Use VAI tools, e.g. (as appropriate):
 - Internet
 - Integration workspace, Integration plan
 - Time, VA, Interface Analysis; eliminate Non-VA activity
- Achieve better VAI 'fit' (fit, form, function), or co-ordinate with (1) end-user (2) other VA activities



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1 *Place within the 'Big picture'.* Sometimes a start is to find the Value-adding Interfaces and non-value-adding ones. Interfaces with functionality are obvious, without them there is no value. Interfaces with end-users may previously have been neglected.

1.1 *Examine end-user (or next user) needs, wants etc.*

1.2 *Examine next activities (in the process)*

1.3 *Characterize (key) interfaces (these create or add value; and/or they create significant problems).* This includes looking at the nature or behaviour of the interface, what adds value, what loses value. Also looking for an order of precedence, most important to least significant whilst considering normal and abnormal conditions. Focus on the Value-adding Interface tends to find and characterize (end-user) value which is not the same as product or process characteristics.

2 *Use Value-adding Integration tools, e.g. (as appropriate):* (also see Intro Doc.)

2.1 *Internet*, 2.2 *Integration workspace, Integration plan*

2.3 *Analysis of Time, Value-adding metrics and Interfaces; eliminate non-value-adding activity.* Another way of eliminating non-value-adding activity is by converting it into a value-adding activity, starting by identifying a Value-adding Interface. This may be an option where you must do the work anyway, e.g. because of legal requirements.

3 *Achieve a better Value-adding Integration 'fit' (fit, form, function), or co-ordination with (1) end-user (2) or other Value-adding activities.* Creativity techniques, e.g. Brainstorming, may help and fit in; Integration providing a better focus for ideas.

STEP 2 Check compliance

- Check technical/commercial compliance
 - Against requirements, specification, statutory etc.
 - Against (precise) expectations (of end-user, etc.)
 - Review cost/price and/or value for money, viable?
- Resolve any remaining issues
- If important issue unresolved consider alternatives (failure is not one of them)



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Value-adding Integration is all about 'reality' being real, not about it fitting a big 'bright' idea. If reality hasn't yet kicked in, now is the time. This step also establishes metrics for surveillance or monitoring during later stages.

(For example, my company's reality includes: Compliance with safety and rail legislation, standards, specifications, a general duty of care and professional liability. Also electricity is hazardous and to make the risks to human safety acceptable it needs to be actively and continuously managed.)

1 Check technical and commercial compliance This is a far reaching topic including:

1.1 Against requirements, specification, statutory etc. Also mission, values, overall strategy, priorities.

1.2 Against (precise) expectations (especially of the end-user etc.)

1.3 Review cost against price and/or value for money. Is it viable and worth doing?

2 Resolve any remaining significant issues

3 If an important issue is still unresolved consider the alternatives. Instead of 'failure is not an option', I prefer the original quote about, Mission Control during the successful rescue of Apollo 13, '....when bad things happened, we just calmly laid out all the options, and failure was not one of them. We never panicked, and we never gave up on finding a solution.' And they brought them home!

STEP 3 Assurance

(successful outcome fulfilment assurance)

- Check what is proposed to deliver outcome
 - Assess risks and mitigation measures
 - Review Management plan/arrangements, resourcing, delivery methodology etc.
 - Refine and improve, reduce negative side-effects
- Unacceptable residual risks, consider alternatives



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Assurance is about putting in place, beforehand, what is needed to deliver a successful outcome. (There is a subtle difference between focusing on successful outcomes and preventing non-fulfilment because the former focuses on what is wanted, or desired - usually of a higher standard, rather than what is to be avoided, which is the lowest acceptable standard.)

1 *Check what is proposed to deliver a successful outcome*

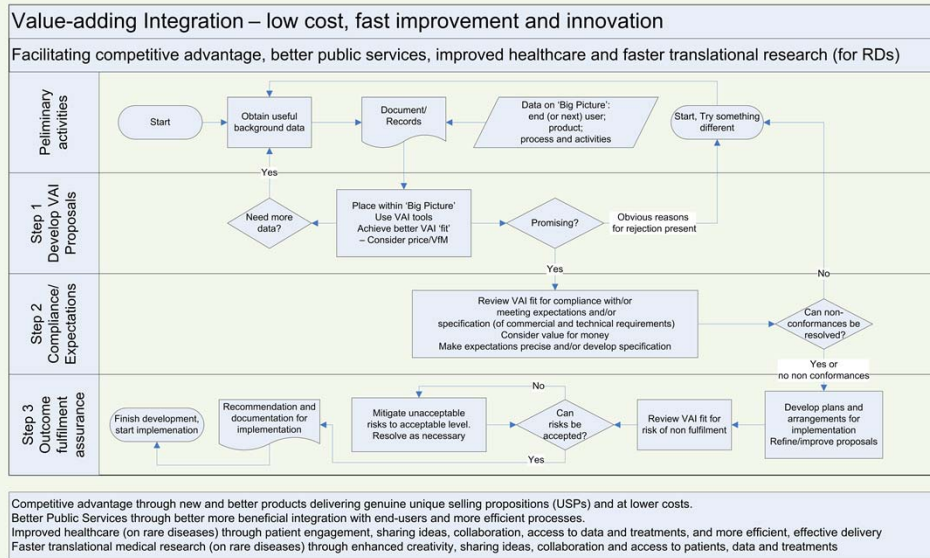
1.1 *Assess risks and mitigation measures* These need to be appropriate to the risks and degree of novelty. Mitigation measures need to be continuously effective.

1.2 *Review Management plan and arrangements, resourcing, delivery methodology etc.* There is a subtle difference between focusing on risk mitigation and on arrangements to deliver a successful outcome. So which should take precedence in order of importance and effort? Putting in place arrangements, planning, people, production facilities etc, to deliver a successful outcome tends to address some risks and is aiming at a higher level of performance. However, other considerations, such as legal requirements may give mitigation of some risks a high priority.

1.3 *Refine and improve* the invention, innovation or improvement to enhance value-adding performance and *reduce* any loss of value or *negative side-effects*.

2 If *Unacceptable residual risks* remain, consider the *alternatives* or options open.

Flow Chart of VAI



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A flowchart may help in visualizing the process of Steps 1 to 3. You may wish to download and study.

Examples – (VAI can be fun)

- ‘The Rocket’ (early steam locomotive and benchmark)
- Seagull to Spitfire (planes - RJ Mitchell lead designer)
- Sandwich (food for thought)
- BSF’s doctors’ and parents’ private listservs
- Music (to your ears – much VAI during development)



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You may enjoy these examples. The people involved clearly knew about interfaces which add value and how to create or improve them. No time now to study in detail. (More examples in Introduction to VAI document)

1 *The Rocket* set the benchmark for steam locomotive design at value-adding interfaces, wheel-rail (functionality) and fire-steam production (performance).

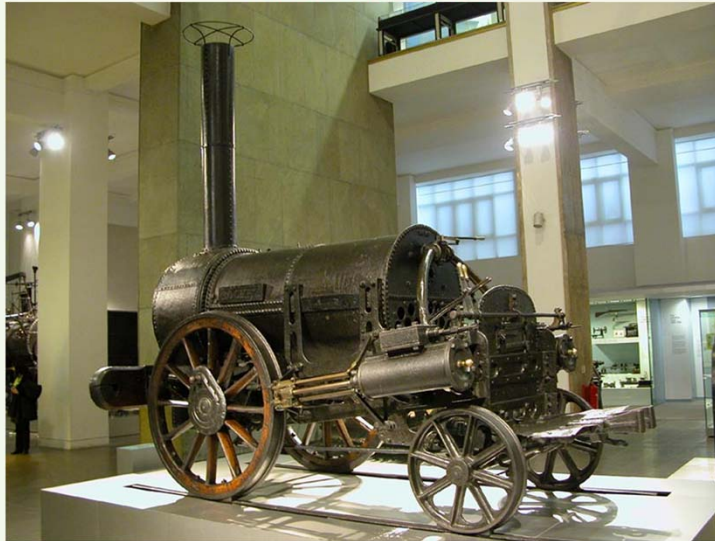
2 From *Seagull to Spitfire* there was an accumulation of knowhow relating to aeronautical behaviour and how to squeeze out more **overall performance** especially during design compromises.(see also slide 35) These examples also show effects at Value-adding Interfaces where it is a newish invention or technology; especially, how existing paradigms are overcome and the principles established can have a long life. We will come back to these examples in a moment:

3 The *Sandwich* Once the VA interface is understood there are many VA possibilities.

4 The *Barth Syndrome Foundation’s doctors’ and parents’ private listservs* are worldwide virtual communities, like this one, bringing experts and patients closer together for sharing information and further research. Also, parents who would otherwise be very isolated to support each other. There are many lessons here about furthering research and support centered on a virtual community to add value.

5 *Music*. Much VAI of diverse VA elements *during development* providing a basis for future progress. E.g. written notation, harmonic progression, equal temperament.

The Rocket



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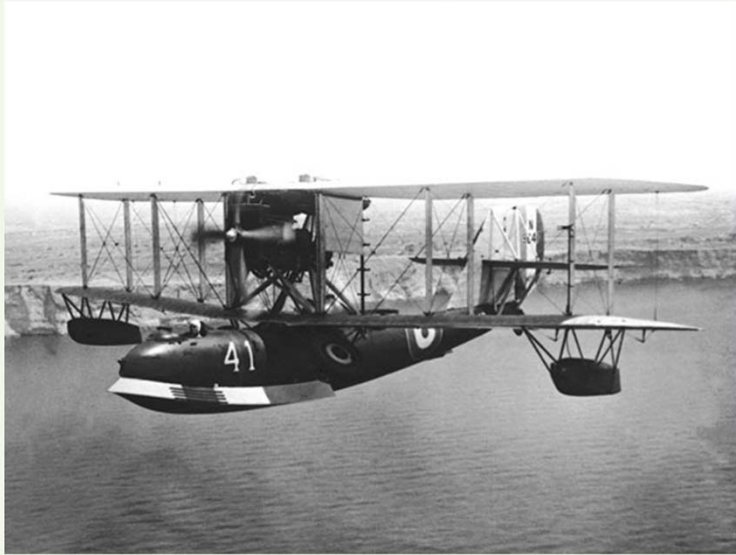
Rocket Science – designed by George Stephenson in 1829 for the Liverpool – Manchester Railway. Not the first steam locomotive. First, is a non-value-adding interface, between boiler plates; no loss of value if this does not exist and problems like leaks disappear.

First value-adding Interface, relates to functionality – wheel-to-rail. Wheel does not turn, train is going nowhere – no value. If it turns too far, wheelslip, going nowhere. Part of the solution was to place much of the weight over the driving wheels to improve grip and **these days sand is also added to this Integration Space.**

The second value-adding interface, relates to performance, and production of pressurised steam to move the train; the more surface area of boiler in contact with water and heat the better. So instead of doing nothing or one large pipe or flue, through the boiler there are many small ones, made of copper. And the exhaust steam from the cylinders is **added to this Integration Space** to draw the hot gases through the fire tubes and out of the stack.

Let's fast forward to the 21st century and space travel. Can various systems and equipment on a space craft, in addition to performing their normal functions, be **integrated** in ways that add further value, perhaps to their original functionality, in a similar way to exhaust steam, hot gases and water? And can the situations created lead to **more** opportunities to add value? (We saw what happened with music.)

The Seagull



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This example – Seagull to Spitfire goes from this in about 1923

The S6b Racing Seaplane



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To this in 1931 – the wings are very thin and the cockpit has limited visibility – plane only needed to fly fast in straight lines with a few bends.

The Spitfire - fighter



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To this in 1936 although this actual plane, is a later Mark 9 from 1943.

Supermarine, the makers, had no previous fighter experience, and little of high speed manoeuvring in dogfights – racers fly straight and level.

What was behind making the Spitfire advanced for its time, versatile, much loved by pilots and formidable?

A strong team led by a gifted designer and chief engineer, RJ Mitchell, who learnt engineering, and perhaps human/machine interactions, on steam locomotives, and aeronautics on racing seaplanes and was committed to:

- 1 Close collaboration between designers, engineers and pilots and between airframe and engine manufacturers, with an emphasis on **effective communications**, and
- 2 Carrying out detailed study of what was needed to satisfy design requirements and then achieving an **efficient design**, which satisfied those requirements with the smallest margin, and;
- 3 He grew up where the regional English dialect omitted superfluous words.

Examples 2

- This presentation
 - You are part of the presentation
 - Use of Internet (as VAI tool) to:
 - Present more information, get feedback
 - Trial with test pilot led to many changes
 - Future use with Integration space and Internet (as VAI tools integrating, people, methodology and info):
 - To solve problems



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1 *This presentation* demonstrates some Value-adding Integration usage and how future potential, and a new situation can be identified, for example:

1.1 *You are wherever possible a part of the presentation*

Use of the Internet (as a Value-adding Integration tool) to: Present more information, and get feedback, start discussion and hopefully lead to better innovation methodologies.

2 *Trial with test pilot led to many changes* through constructive feedback.

3 *Possible future use with Integration space and Internet. These are Value-adding Integration tools used to assist integrating, people, methodology and information, in order to solve problems.*

(The approach by focusing on creating and improving Value-adding Interfaces also identified some of the problems of delivering a presentation over the Internet with limited interaction with you. There should be a Value-adding Interface between me and your use of the material on a real problem; that interaction would be more beneficial or value-adding to both of us, for example, to reduce misunderstandings and omissions.)

Examples 3

- Invention or scientific discovery came first
(curiosities until Value-adding Interfaces and VAI emerged)
 - Electricity
 - Post-it® glue
- In-house end-user development
(unglobalized unless Value-adding Interfaces and VAI emerge)



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1 The *Invention or scientific discovery came first*. Value-adding Integration usually starts from the Value-adding Interface. That does not stop the Methodology being used in another way to support work following a scientific discovery, invention or 'bright idea'. These remain just curiosities until someone identifies practical uses and turns it into a viable product etc. A couple of well known examples.

2 Sitting in your organizations are examples of *end-users* coming up with innovations and developments that work for them. The problem is recognizing the potential and until that happens these cannot be turned into anything else – you cannot globalize in some way into a viable value-adding product or process.

Dr Jeff Towbin (cardiologist, formerly of Baylor School of Medicine, Texas Children's Hospital, Houston) once said 'If you don't look, you don't find', (in relation to rare disease diagnosis), but you need to know how and what you are looking for as well. The Methodology helps you to know what you are looking for.

The initial question to ask is 'Does **this** or does **this** when applied to **that** create or improve a Value-adding Interface?' (**This** is used to mean invention, discovery, or in-house end-user development.)

Examples 4

- Improving Process and Product (outcome from process)
 - Streamlined Tender Evaluation (STEP)
 - Changes a mainly non-VA activity into a VA activity
 - Focuses on getting products better than specified (with reduced risk to a successful outcome)
 - Permits better engagement with innovative SMEs
 - Reduces workloads and stress on buyers and suppliers (typically 70-80% saving on time and effort)



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1 In this example the product improves following delivery process improvement. The slide shows the main advantages, there are several other advantages as well.

1.1 This subject is enough to fill a presentation in its own right – so this is a very brief look. This example deals with procurement in organizations. Tender or proposal evaluation is part of the process; it can be time-consuming and error-prone. The problem is made worse by time pressures. In the United Kingdom it is common to pre-qualify potential tenderers to reduce the number of tenders to be evaluated. Actual evaluation of those tenderers invited requires minute, ‘on a level playing field’, study of sometimes long tenders for compliance against detailed specifications.

All this activity on suppliers you are not going to do business with gets in the way of spending time addressing potential issues with the supplier you want to work with. And why, as an end-user do I want a product that just about complies with my specification? I actually want something better, and the better it is, the better.

Taking the Value-adding Integration perspective looks at the whole process from the product end-user’s perspective and needs. So tender evaluation ends up using unique selling propositions, providing real value to the end-user. When these are listed in order of importance as bullet points that is fast to do. Then, with a preferred bidder there is time to go through the detail of their tender to answer the fundamental questions, ‘Do you comply with my specification and what is in place to deliver a successful outcome?’ If I don’t like your answers I go to the next best tenderer.

Advantages of VAI Methodology

(Unique Selling Propositions - USPs)

The term 'USP' or unique selling proposition is used here to describe items, features or utility that is of real value and that stands out.

The Value-adding Integration Methodology also has one special feature – it is in itself an example of Value-adding Integration bringing together product (or end result) improvement and process (or production) improvement into a common methodology. That opens up more opportunities for further Value-adding Integration that did not exist before. Some of the following USPs show this.

Overview of Potential Outcomes

- Better products and public services; lower cost
- Process improvements and efficiencies
- Reduced innovation associated risks
- Reduced wastage and environmental impact
- Improved working environment
- Help with problematic situations (next slide)
- Faster (overall) research progress



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8 (last) This was a major motivator to formalize the Value-adding Integration Methodology, especially research into rare diseases. Any research is a sequence of periods of value-adding activity and non-productive or non-value-adding intervals which can lead to a considerable delay in making overall progress. Even a small reduction in non-value-adding time helps achieve *faster overall research progress*.

8(last) And there is one less obvious feature – The Value-adding Integration Methodology can be applied directly to fix a problem if it arises or even get an improved overall outcome. (Not quite, ‘you can’t go wrong’, but so far it looks interesting.)

(That’s useful in complex situations where ‘value’ is made up of interdependent parameters. In such a situation improving something, could make something else worse, for example, design compromises need to be made, or some things are more important (value-adding) than others, or a non-value-adding effect such as non-value-adding work occurs as an unwanted side-effect.)

(The Value-adding Integration Methodology fits in with techniques for creativity such as brainstorming – the combination is itself an example of Value-adding Integration.)

Collaboration is not included in this list because it is a form of Value-adding Integration and a means to an end, rather than itself being a successful outcome.

Problematic Situations

- VAI can help produce better outcomes where:
 - Remote or virtual working is difficult:
 - Co-ordination, understanding, duplication etc.
 - Interface problems exist between:
 - Product - user (usability, functionality, performance etc.)
 - Stages of an overall process (delays, errors, losses etc.)
 - Patients and environment (quality of life - rare diseases)
 - Available resources and funding are limited
 - Competing at a disadvantage, typically:
 - Size, market standing, new entrant, costs



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1+ Problematic Situations:

1 Value-adding Integration can help produce better outcomes where:

1.1 Remote or virtual working is difficult: typically the problems could include:

Poor Co-ordination of efforts, understanding each other, duplication of efforts etc.

1.2 Interface problems exist between: Product and user (typically of usability, functionality, performance etc.). Stages of an overall process (typically causing delays, errors, losses etc.) Patients and their environment (typically poor quality of life – this problem was noted in relation to rare diseases).

1.3 Available resources and funding for research and development and/or value-adding process improvement are limited.

1.4 Competing at a disadvantage, typically: in relation to competitors, small size, lower market standing, is a new entrant, costs are higher.

The one problematic situation not listed here and all too common is working to a short timeline. The Value-adding Integration Methodology can help through improving collaboration and speeding up processes. However, for an unrealistic timeline, the Value-adding Integration Methodology may help a little at the beginning but critical later steps are likely to be skimmed or omitted substantially increasing risks.

USPs of VAI

- Better products and services
 - Identifies (new) place(s) of value (at interfaces)
 - Improvement (often) low cost, low risk, in-house
 - Greater focus on customer, client
 - Reduced wastage and environmental impact
 - Further potential for adding value (at interfaces)



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Better products and services

Identifies (new) place(s) of value (at Value-adding Interfaces)

Improvement can be carried out (often) at low cost, low risk, and in-house

There is greater focus on the customer, or client

There can be reduced wastage and environmental impact

There can be further potential for adding value (at Value-adding Interfaces)

Value-adding Integration appears particularly appropriate to finding ways of improving services at minimal cost, not just delivering existing ones at lower cost.

USPs of VAI

- More efficient activities and processes
 - Reduced non-value-adding activity, time, costs
 - Reduced interface problems
 - Improvement (often) low cost, low risk, in-house
 - Reduced wastage and environmental impact
 - Further potential for process improvement (at or near interfaces)



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More efficient value-adding activities and processes

Reduced non-value-adding activity, time, and costs

Reduced interface problems and associated costs etc.

The *improvement* can (*often*) be carried out at *low cost*, with *low risk*, and *in-house*

There is potential for *reduced wastage and lower environmental impact*

There is *further potential* for value-adding activity and *process improvement (at or near interfaces)*. This applies to Value-adding Interfaces and other interfaces within the process or in the sequence of activities.

USPs of VAI

- Risks to successful outcome reduced
 - Assessing risks directly
 - Assessing pro-active measures – forward looking
- Applicable to new businesses
- Applicable to innovations
- Fits in with later Plan, Do, Check, Action cycle (during implementation of proposals)



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Doing something new must involve risks. However, Value-adding Integration attempts to reduce those risks through Steps 2 and 3 of the Methodology. It also tends to reduce the risks more subtly because we are always working on adding more value through Value-adding Integration. If we are not doing this, it becomes obvious.

Risks to a successful outcome are reduced because, risks are being assessed *directly*. Also, pro-active measures are being put in place to achieve a successful outcome and the effectiveness of these are being assessed – this is *forward looking* rather than trying to guess, perhaps with reference to past experience.

Applicable to new businesses and *Applicable to innovations* These situations could be problematic because there is less of a track record of experience. However, pro-active measures are being put in place through the Value-adding Integration Methodology to deliver a successful outcome and reduce the risks.

Activities carried out particularly during Steps 2 and 3 *fit in with a later Plan, Do, Check, Action cycle (during implementation of proposals)*. Because Steps 2 and 3 have been carried out, there is something in place to use for checking results against later.

USPs of VAI

- Reduces waste and environmental impact
 - Clear definition of wastage and non-VA activity
 - Wastage identified (through clear definition)
 - VAI focus eliminates/reduces wastage (and non-VA activity)



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Carrying out Value-adding Integration has the potential to reduce *waste and environmental impact* arising from doing value-adding work. This arises through having a *clear definition for wastage and non-value-adding activity*. The result is that *waste* can be *identified (through the clear definition)*. And the *Value-adding Integration focus* then *eliminates or reduces this wastage (and non-value-adding activity)*.

Potentially anything not at the Value-adding Interface could be waste or non-value-adding and eliminated. In reality, that can be difficult to achieve because there could be other practical reasons. However, with the Value-adding Integration approach there is an imperative to try, which previously may not have existed. For example, machining operations may have been considered value-adding, whereas, under the Value-adding Integration approach they are looked at as mainly producing waste until the Value-adding Interface is reached.

USPs of VAI

- Improved working environment
 - Reduced non-value-adding workloads
 - Less interface fire-fighting and problems
 - Less stress on individuals (emphasis on process)
 - Reduced risk of failure (below expectations)
 - Potential for more individual contribution
 - Higher morale/confidence and esprit de corps



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Through carrying out Value-adding Integration the *working environment* can *improve*. This occurs as a result of: *Reduced non-value-adding workloads*, *Less interface fire-fighting and problems* and *Less stress on individuals* arising. There is *emphasis on the value-adding process*, rather than pushing staff to perform better despite the problems present.

There is *Reduced risk of failure* or outcomes being *below expectations*. There is *Potential for more individual contribution* to problem solving and adding more value. This is likely to lead to *Higher morale, confidence, trust and esprit de corps*.

Value-adding Integration is a practical approach to valuing personnel and the contribution that each person can make to an organization's success. It accepts that responsibilities exist and treats people with humanity whilst being results driven.

USPs of VAI

- Simple (unified approach), flexible and fast
 - Reduced time, effort and resources to apply
 - Increased likelihood to find/correct problems
 - Promotes efficiency and adding more value
 - Reduced risk of failure (below expectations)



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These are advantages of having a common methodology for improvement of the value-adding process and of its end result or deliverable(s).

See also slide 36 for more information on fast and easy to implement.

USPs of VAI

- Facilitates:
 - Customer/client focus (for activities)
 - Creativity and ideas (outside existing paradigms)
(see also next slide)
 - Analysis (into VA and non-VA elements)
 - Collaboration, co-ordination
 - Finding new opportunities (low cost, low risk)



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Finding new opportunities applies to:

(a) improving an existing product or service;

(b) looking for an application for an invention, 'bright idea', or in-house end-user development;

(c) working from a potential customer/end-user/patient to develop a new product or service offering.

USPs of VAI

- Creativity and thinking outside the box
 - Creates pathway into new and novel VA situations
 - Moves discussion, analysis, creativity to new situation
 - Challenges 'reality' (knowledge, assumptions, invention)
- Provides basis for imaginative collaboration on:
 - Finding and refining product features (or utility etc) to add
 - Discovering items (eg features, utility or stages etc) to omit
 - Developing next steps



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Points here are expanded in the Introduction to VAI document accompanying this presentation, (VAI Introduction.pdf).

Creativity and thinking outside the box. The Value-adding Integration approach *Creates a pathway into new and novel value-adding situations.* The result is that it *Moves discussion, analysis, creativity onto the new situation*, rather than remaining focused on the present or past unsatisfactory situation. This approach *Challenges* the current view of 'reality' based on existing *knowledge, assumptions and invention*.

Existing paradigms which were previously limiting creativity may also be more visible in the light of hindsight arising through the Value-adding Integration approach.

The Value-adding Integration approach *Provides a common basis for imaginative collaboration* utilizing the end-user's imagination and intellectual capabilities *on: Finding and refining product features (or utility etc.) to add* (adding-value). *Discovering items (e.g. features, utility or stages etc.) to omit* (that is, removing non-value-adding). *Developing or moving to the next steps*, typically for the value adding-elements in products, services, healthcare or research etc.

USPs of VAI

- Education and training
 - Greater understanding of end-user, next-user perspective(s), needs, wants etc.
 - Greater understanding of VA and non-VA
 - In product and service features
 - In activities and processes
 - In healthcare and quality of life issues (rare diseases)
- Helps non-specialists
- Faster learning through cross-pollination



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3 Bringing observation, expertise and experience from elsewhere sometimes works and sometimes restricts creativity and problem solving; problems exist of communicating, working together and adapting paradigms to the new situation.

Value-adding Integration inherently improves the situation by providing a common focus, relevant language, method of analysis and imperative to co-operate. Knowledge and understanding of Value-adding Interfaces and Value-adding Integration gained from analysis of one situation is then more readily adapted and used elsewhere.

Case Study - RJ Mitchell aircraft designer was able to understand plane design issues, especially interface issues, and use his accumulated knowledge to problem solve, optimize, and push the bounds of performance. He may have been inspired by how well birds integrated all their functions, wings, body etc. and was well aware of steam locomotive engineering.

Pilots loved the Spitfire and one John Gillespie Magee, Jr captured his experiences in the poem 'High Flight', *Oh! I have slipped the surly bonds of Earth.*

The poem, 'High Flight', for some people is not just nice words, it contains more Value-adding Integration, for example, with their feelings towards flight.

USPs of VAI

- Easy and fast to implement
 - Flexible, can be adapted to situation
 - Apply to selected areas/problems
 - Fast training and learning
 - Integrates with existing improvement efforts
 - Uses VAI to adapt and improve application of VAI principles and methodology to each situation
 - Includes some automatic or self-adaptation



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Start using immediately and learn quickly by doing. It does not need extensive reading or study before basic principles can be applied to gain almost immediate benefits. Familiarity and understanding can develop leading to a 'natural' feel for value and interface management.

The ability to adapt and improve to suit each application of Value-adding Integration principles and methodology arises because the same approach is used for improving products and processes.

USPs of VAI

- ‘Reaching-Out’ & altruism: mutually beneficial
 - Business ↔ Public Sector interchange
 - Business or Public ↔ Healthcare interchange
 - Business or Public ↔ Med. Research interchange

(Interchange is facilitated; the more you do the more benefit you and others get through cross-pollination and changed paradigms)



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This is about transferring lessons, and experiences across barriers because you can see the commonality, what you have in common through application of the Value-adding Integration Methodology, and the solutions being used. Also, better able to understand the different standards or metrics being followed. So in a nutshell, the Value-adding Integration Methodology creates a new situation which aids effective communication especially between people where major differences exist of background, experiences and corporate culture.

On a personal level, I'm useful to the Barth Syndrome Foundation because of my business and virtual working experience. In return, I've learned so much. And I think business has much more to offer non-profits than just money - brainpower. It is a two-way process facilitated by Value-adding Integration and the Value-adding Integration Methodology.

Just to digress a moment. In the case of Barth syndrome, there are some medical connections between this disorder and human health and performance during space travel or in other demanding environments in the areas of energy metabolism, resistance to infection, heart performance. Perhaps there will be an opportunity for a future presentation from some researchers on this connection?

USPs of VAI

- Improved healthcare (rare disease patients)
 - Few patients, clinicians, (widely dispersed)
 - Easier access to resources, data and data collection
 - More effective dissemination of information (symptoms, treatments, latest research)
 - Better patient and ‘quality of life’ engagement
 - Identify and prioritize highest VA activities
 - Reduce non-VA activity and overall costs
 - Facilitate collaboration, discussion and ideas



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Rare diseases present particular challenges because the *few patients and clinicians are widely dispersed*, and funding is limited. So while waiting for research to deliver results such as better treatments or ultimately a cure, Value-adding Integration can help make an impact now, through, for example:

Easier access to resources, data and data collection for researchers and experts and *More effective dissemination of information on symptoms, treatments, and latest research* to clinicians and patients.

Better patient and ‘quality of life’ engagement through being able to more easily identify the characteristics of their ‘Big picture’ and therefore respond to it. For example, questionnaires can be developed for the discussion with patients about problems they face (effectively at the ‘quality of life Value-adding Interface’).
Identify and prioritize highest value-adding activities.

Reduce non-value-adding activity and consequently overall costs.

Facilitate value-adding collaboration, discussion and exchange of ideas between clinicians and researchers from different specialisations and interests because the common value-adding focus exists and collaboration is itself seen as value-adding (that is, as an example, of Value-adding Integration).

USPs of VAI

- Faster translational medical research
 - Rare diseases: few patients, clinicians, researchers
 - Easier access to resources, data and data collection
 - More effective dissemination of information (symptoms, treatments, latest research)
 - Facilitate collaboration, discussion and ideas
 - Reduce non-VA time periods in overall progress



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Faster translational medical research; Rare diseases are a particularly challenging environment for progressing research because the *few patients, clinicians and researchers* are widely dispersed, and funding is limited. Value-adding Integration can help through, for example: *Easier access to resources, data and data collection* for researchers and experts, *More effective dissemination of information* including the *latest research* to clinicians and researchers. Also, *Facilitate* value-adding *collaboration, discussion and exchange of ideas* between clinicians and researchers from different specialisations and interests because the common focus exists and collaboration is itself seen as value-adding (a VA Interface). *Reduce non-value-adding time periods in the overall progress* of research because there is a focus on these.

(Value-adding Integration may also apply to research generally, that it assists the process, where similar type issues exist. However, research is such a wide ranging topic that caution is necessary about what benefits could be obtained.

Describing problems, observations and analysis in Value-adding Interface terms may also help the longer term accumulation of useful knowledge and knowhow from research. This assumes that the Value-adding Interface remains there permanently although its characteristics may change as more knowledge is gained about it. During early development of aeronautics the focus was on performance at interfaces and rapid progress was made in understanding their characteristics and in resulting racing seaplane design.)

USPs of VAI

- Subtle beneficial effects present
 - For personnel to facilitate improvement activity
 - Reduces their workload, improves their work environment
 - For personnel to be proactive for assurance
 - Scalable to complexity, innovativeness of task
 - Changes mind-sets and expectations, including:
 - Attenuates insularity ('not invented here', cliquishness)
 - Better understand social/public service aspects
 - For patient/clinician dialogue (VA in healthcare)



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Subtle beneficial effects present. These are, perhaps, less noticeable.

For personnel to facilitate improvement activity because use of Value-adding Integration *Reduces their workload*, and consequently *improves their working environment*.

For personnel to be proactive for successful outcome fulfilment assurance.

Scalable to complexity, innovativeness of task. The same basic or overall steps are followed in carrying out Value-adding Integration although the content or number of the activities involved can be expected to increase as appropriate.

Changes mind-sets and expectations, including: Attenuates insularity (including '*not invented here*' attitudes and *cliquishness*) since everyone can see the benefits of working together to add value.

For people involved to *Better understand social or public service aspects* where their activities are related to a 'bigger picture' which emphasizes these aspects.

For better patient/clinician dialogue (effectively this is part of value-adding activity *in healthcare*).

USPs of VAI

- Innovative Pricing, Risk Management/Sharing
 - Additional information available (from VAI) on:
 - Risks to a successful outcome (contract, project etc)
 - Proactive management for a successful outcome
 - Risk mitigation measures (existing and proposed)
 - Potential to:
 - Reduce risk premium (fixed price)
 - Accurately monitor rate prices against progress
 - Risk share between buyer and supplier
 - Apportion contract to fixed and rate prices segments
 - Incentivise against goals



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All of these become more realistic possibilities.

Innovative Pricing, also Risk Management and Sharing of risk, because:

Additional information is available from following the Value-adding Integration Methodology, on:

Risks to a successful outcome (to the contract, project etc.)

Proactive (forward looking) management in order to deliver a successful outcome

Risk mitigation measures (existing and proposed) and their probable effectiveness

There is also Potential to:

Reduce any risk premium (included in a fixed price) to cover uncertainties and risk

Accurately monitor rate prices against actual progress being made on the contract

Risk share between buyer and supplier in order to facilitate innovation activity

Apportion innovation related contract to fixed and rate prices segments

Incentivise the innovator/supplier against definable goals

Questions?

Accompanying this presentation are Frequently Asked Questions together with answers which provide more information than in the following slides. (VAI FAQs.pdf) FAQs are an opportunity to do Value-adding Integration to the Value-adding Integration Methodology and accompanying notes.

Some answers could be lengthy if you need more detail.

USPs in the following slides refers to products or services.

How did VAI Methodology arise?

- Participation in UK Gov. CO SME Test Group
 - Saw need for Streamlined Tender Evaluation and use for method of developing USPs: simple, low cost
- Translational needs of rare disease research
 - Barth Syndrome Foundation USA/Trust UK
 - Looking for ways to get more from limited funds
- Green Leader Limited experiences (SME)
 - Problems at system, contractual, operating, man-machine interfaces and with complex procurement



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I thought of formulizing the Value-adding Integration Methodology, based on our business experience in Green Leader Limited, because some parallels strands came together at about the same time.

1 CO = Cabinet Office, part of the UK central government, directs policy for government departments.

SME = Small and medium business enterprises.

1.1 See slide 23 for explanation of Streamlined Tender Evaluation using Unique Selling Propositions (USPs).

2 My interest in rare diseases was a powerful motivator to act, if there as any way to get more results in a shorter time.

3.1 Problems at interfaces – in our experience same kind of problems are recognizable everywhere unless managed appropriately.

FAQs on VAI

Existing methods are just as good?

VAI uses some existing improvement ideas, concepts and methods and adds new concepts to them (focusing on VA and interfaces) to achieve better overall results - better products, services and healthcare (for rare diseases) at lower costs.

VAI is likely to help where previous improvement efforts have delivered disappointing/costly results.



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1 And if you believe that there is nothing new under the sun you may be interested in this use of Value-adding Integration

The thing that has been, it is that which shall be; and that which is done is that which shall be done: and there is no new thing under the sun.

(Book of Ecclesiastes)

Lets do some Value-adding Integration :

SONNET 59 William Shakespeare

*If there be nothing new, but that which is
Hath been before, how are our brains beguiled,
Which, labouring for invention, bear amiss.*

And some more Value-adding Integration to paraphrase SONNET 59:

*'If there is nothing new under the sun, but that which
Has been before, how are our brains cheated,
Which, toiling to create something new, mistakenly
Brings forth something that already exists'*

FAQs on VAI

What is new, different or better about VAI?

Uses common (unified) approach to product and process improvement, and interface problems – VA + lower costs.

Focus on interfaces: place where value occurs and has potential for adding more value in the new situation created.

Additional due diligence and refinement stages in methodology.

Uses VAI to adapt and improve itself to each application – potentially lower cost, better and faster results.

Mutually beneficial cross-over between needs/solutions of business, public sector and healthcare & translational research (rare diseases).



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(after last) Can still use existing improvement and creativity techniques, complemented by Value-adding Integration Methodology, in part or whole, in a Value-adding Integration combination.

FAQs on VAI

Differences from Lean?

- Adds VA focus for better product, service and (RD) healthcare outcomes
- Addresses interface integration issues
- Different language directly related to subjects being investigated

Differences from Six Sigma, Quality Improvement?

- Adds VA focus for better product, service and (RD) healthcare outcomes
- Addresses interface integration issues
- Different language directly related to subjects being investigated



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Relationship between Value-adding Integration and Quality Management

From the Value-adding Integration perspective, the quality of conformance, getting consistency against standards or within tolerances, is a problem of variation at interfaces. Value-adding Integration focuses on better management of interfaces and prevention of the problems that occur there. So the imperative of Value-adding Integration would be towards setting up the conditions where variation affecting quality does not occur using built-in proactive measures – not in the quality control function of trying to detect rejects.

The Value-adding Integration focus on improving customer facing interfaces, making them more value-adding, fits with quality as defined as meeting or exceeding customer expectations.

FAQs on VAI

How do you measure or determine value?

End-user/patient decides value; compared quantitatively or qualitatively against cost, beneficial effects or other sources of value.

No significant USPs or a Commodity product?

Significant USPs could still be identified using VAI even with commodities



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1 A problem with trying to ask is that the customer or patient may not be able to express themselves very well. The Value-adding Integration approach makes it easier to frame insightful questions and dialog around the Value-adding Interfaces, identifying them and subsequently, characterizing them.

2 No significant USPs previously found in the product or service to be improved. Or it is regarded as a commodity bought on price.

FAQs on VAI

Too many USPs identified?

Good news, rank and evaluate

Some may not be real 'U'SPs or beneficial

USPs cost more?

Sometimes – calculate Vfm (to customer/end-user)

(Vfm – value for money)

Socio economic criteria (SEC)?

Ranking USPs can include SEC and G'ment policy



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These are USPs relating to one or more Value-adding Interfaces in a product or service.

There are various ways, taken from existing practises of tender or request for proposal evaluation, that could be used to rank USPs. However, some factors cannot be quantified and a qualitative assessment, using professional judgement and experience, needs to be made.

FAQs on VAI

What are the risks (of failure of VAI process)?

Inaccurate and/or inadequate input data

Steps 2 and 3 not carried out adequately

Unrealistic expectations

Low personnel commitment (to success)

Poor follow-up during implementation stages

What if data/feedback from end users/patients is unhelpful?

Focus on interfaces, (including creating and enhancing value and problems present); helps to identify useful questions to ask end-users/patients and verify feedback received.



FAQs on VAI

Too complex/novel to work (in my organization)?

Needs a plan and 'success factors' in place –
SFs = motivation, supportive framework,
competency, management deployment

Anything else critical to success (of VAI)?

Precision, resolution and empathy



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1 These 'success factors', addressed by the management function, need to overlay the innovation/improvement process:

Motivation by stakeholders to achieve successful outcome(s) including innovation;

Supportive framework, e.g. organisation, resources, management of risks;

Competent and adequate human resources, need to have appreciation of subject through experience, training and analysis/study etc;

Management deployment to achieve successful outcomes, typically: control, monitoring and feedback of performance/progress, focussing or direction of efforts including responsibilities.

Further development is a recognizable 'innovation infrastructure' to support successful innovation through the sequence of activities with elements joined through Value-adding Integration .

2 Could be said to apply to the individual, team and organization.

FAQs on VAI

How much VAI is already happening?

Many successful (partial) examples exist – modern trend already well established. You have probably done some aspects of VAI.

Examples tend to be piecemeal and/or partial applications without the use of a systematic methodology and language.

FAQs on VAI

How easy/quick is using VAI?

Everyone is different, concept is simple, techniques exist to help easy/quick training (pilot or rollout)

Will my personnel co-operate?

For them – obvious benefits, less work and can showcase delivering better value and VAI activity

Costs to implement (across organization, product)?

Low, varies – would need to estimate for each use



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Rather than estimating costs, try estimating potential benefits starting from USPs.

FAQs on VAI

More background available?

Much, including underlying theory, assumptions

Is there something better we can use?

Not yet – needs more VAI to develop pipeline

How could VAI methods improve?

Use VAI, adapt to needs/requirements and tell us your priorities, needs and problems



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If you are developing an improved innovation methodology suggest:

Aims (for the methodology)

To make innovation and improvement:

- 1 Easier
- 2 More productive
 - 2.1 Better outcomes
 - 2.2 Faster
 - 2.3 Lower risk
 - 2.4 Lower process cost
- 3 More fun (for everyone involved)

Features (to consider)

Methodology to facilitate:

- Creativity (e.g. through techniques for generating ideas, use of language)
- VA collaboration (e.g. through effective communication, easy usability)
- Problem identification and analysis (such as focus on VA Interfaces)
- Compliance stage (typically to consider wide ranging compliance issues)
- Risk reduction and successful outcome fulfilment assurance
- Scalable in use to suit application/problem/subject
- Methodology can be used to improve its own implementation
- 'You can't go wrong' (results always fit your 'virtuous' concept)

Getting Started

VAI Getting Started

- Use a pilot/trial
- Use for small improvements first
 - Less risk, lower cost
 - Faster to introduce
- Adapt to required application(s)
 - Use VAI to improve use/suitability of VAI methods



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1+ This approach is to start quickly and cautiously, and learn as you are going along. It doesn't 'rock any existing boats', just complements what you are already doing.

You could start by:







1 Using a pilot or trial perhaps just experimenting and getting a feel for the concept and methods.

2 Using for small improvements first because there is *Less risk, lower cost* and it is *Faster to introduce* and positive results should appear quicker.

3 Adapt to required application(s) by using Value-adding Integration to improve the use and suitability of Value-adding Integration methods. Using the Value-adding Integration approach should be flexible and adaptable because it can also be used to improve its application and appropriateness.

Presentation – For your future use

(see slide footer color)

-  NHHPC aims : slides 5-6
-  How to use VAI methodology : 7-15
-  Business case input/advantages : 24-41
-  Drilling down further : 42-53
-  Other background : 3-4, 16-23
-  Getting started : 54-59



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These color codings are intended to speed future use of information contained in presentation depending upon your purpose. There are very few slides on how to use the methodology, and many more to convince your boss to let you try, and address issues they may raise.

Follow up

- Further Information for NHHPC Members
 - Value-adding Integration download on NHHPC website
 - Ask questions (or make comments)
 - Discussion (please contribute your ideas on innovation)
 - Leave VA feedback (to integrate with NHHPC aims)
- Acknowledgements and Thank You
 - Barth Syndrome Foundation Inc.
 - Virtual community – truly inspirational achievements (from nothing when faced with personal tragedies)
 - Contact (for info, to help or donate www.barthsyndrome.org)
 - NASA
 - Helping to make the future, today (special thanks to NHHPC team)
 - Showing that ‘the sky is not the limit’



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1.1 Downloadable are this presentation in Microsoft PowerPoint™, including omitted slides, together with accompanying presenter notes and other documents. There is some duplication since each is a standalone document.

1.2 Please *ask questions* and I will post or email replies as soon as I can.

1.3 Please contribute your ideas to a *discussion* on Innovation and Methodologies.

1.4 Feedback is visible to all members and please comment freely.

2.1.1 More information on Barth syndrome (BTHS) and BSF Inc. is available on their website. (Barth syndrome is a life-threatening, complex, genetic disorder that primarily affects males. Before recent advancements in the diagnosis most boys did not survive. The main symptoms can present in a variety of ways, with differing severity, at any age:

Cardiomyopathy - A weak heart muscle usually associated with enlargement of the heart. This symptom can cause risk of fatal arrhythmias (irregular heart beat).

Neutropenia - A reduction in “neutrophils”, a type of white blood cell that is most important for fighting bacterial infections. During the reduction of neutrophils the individual is vulnerable when exposed to infection.

Muscle weakness - All muscles, including the heart, have a cellular deficiency which limits their ability to produce energy, resulting in muscle weakness and increased fatigue. In some cases this is debilitating.

Growth delay - During childhood most affected individuals are below-average in height and weight, often substantially so.)

Further Information

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Facilitating competitive advantage, better public services, rare disease healthcare and research

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Happy to also communicate by Skype or other video/telecon facilities.

Thank you for participating

The VAI Methodology is a tool, and cannot achieve anything by itself. (apply Step 1)

Where vision is greatest, achievement is greatest. (subject to Steps 2 and 3)



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The visionary and the practical – nothing much can be achieved without both.

Are these true ‘parents’ of successful invention?

(At Winchester Cathedral the results of their efforts at Value-adding Integration are readily visible in artistry, skill and ingenuity. Richard Franck appears to be the first written author of the phrase in English, 1658, *Art imitates Nature, and Necessity is the Mother of Invention* – what did he actually mean and even then was the full phrase partly obsolete? That voyage of discovery, the era of rigorous science, analysis, ideas and pursuit of knowledge, was already rolling towards the launch pad)